Programmable Digital Timer *Eliso*®

- Digital 7-Segment display Supply Voltage range of 110-240 VAC
- · Input Signal Sensing range of
- 85-265 VAC/100-265 VDC & 20-60 VAC/DC
- Inbuilt library of 33 functions covering majority applications
- · Easy steps to program customized functions
- Suitable for Panel and Base/DIN mounting
- Two separate Channel outputs with selectable Timer modes
- Wide timing range 0.1 Sec. to 999 Days
- Tamper proof with key lock feature
- Provision to edit Preset time
- during Run timeProvision to save two independent
- functional Profiles (P1 & P2)



Cat. No. V7DFTS3 V7DDSS3 Parameters Timer Description Programmable Multi Function Digital Timer Default Functions 1) On delay 17) Impulse on energizing 18) Impulse on/off 2) On delay constant supply type 2 3) On delay constant supply type 3 19) Accumulative delay on signal 4) On delay (control switch resettable) 20) Accumulative delay on inverted signal 5) Signal on delay 21) Accumulative impulse on signal 6) Inverted signal on delay 22) Leading edge impulse 7) Inverted signal on delay type 2 23) Leading edge impulse 2 8) Signal off delay 24) Trailing edge impulse 9) Off delay const. supply type 2 25) Trailing edge impulse 2 10) Cyclic on/off 26) Delayed impulse 11) Cyclic off/on 27) Delayed impulse type 2 12) Asymmetric cycle pulse start 28) Delayed pulse (constant supply) 13) Asymmetric recycler pulse start type 2 29) Delayed pulse (remote trig.) 14) Signal on off delay 30) Delayed pulse (const. supply type 1) 15) Signal on off delay type 2 31) On pulse (control switch resettable) 16) Signal off/on (new) 32) On pulse (supply reset)mode 33) Leading edge bi-stable or step relay Supply Voltage (中) 110 - 240 VAC Supply Variation -20% to +10% (of respine)Frequency 47-63 Hz Power Consumption (Max.) 9 VA Timing Range 0.1s to 999 days Reset Time/Initiate Time 200 ms (Max.) / 100 ms (Max.) High Range: 85-265V AC/ 100-265V DC, Low Range: 24-60V AC/DC / 2 KV Input Signals/Signal Isolation Signal Sensing Time/ Wait Period 50ms. (max.) / 100ms @ Power On & for signal based modes only. ± 0.01% Timing Accuracy 2 C/O Relay Output Contact Rating 5A for NO & 3A for NC @ 250VAC/30VDC (Resistive.) Output Electrical Life 1×10^{5} 5x10⁶ Mechanical Life AC - 15 250V AC/2A, Cos Ø = 0.6, 85°c, 100000 Operations. Utilization Category DC - 13 Ue rated voltage V - 24; Ie rated current A - 2.0-5° C to +55° C Operating Temperature -10° C to +60° C Storage Temperature Humidity (Non Condensing) 95% (Rh) LED Indication SV (Red) - Set Value; P1/P2 (Red) -P1 Running; Up/Down (Red)-Up Counting; SG (Green)- Signal Present; OP1 (Red)-Relay OP1 ON; OP2 (Red)-Relay OP2 ON; IP 30 for Housing & front Facial and IP 20 for Terminals Enclosure Dimension (W x H x D) (in mm) 48 X 48 X 92.5 Weight (unpacked) 160 g Panel / Flush Mountable Base / DIN Rail with 11 Pin Universal socket Mounting Certification IP 20 for Terminals, IP 30 for Enclosure Degree of Protection EMI / EMC IEC 61000-3-2 Harmonic Current Emissions IEC 61000-4-2 ESD Radiated Susceptibility IEC 61000-4-3 Electrical Fast Transients IEC 61000-4-4 IEC 61000-4-5 Surges Conducted Susceptibility IEC 61000-4-6 Voltage Dips & Interruptions (AC) IEC 61000-4-11 Voltage Dips & Interruptions (DC) IEC 61000-4-29 Conducted Emission CISPR 14-1 Radiated Emission CISPR 14-1 Environmental IEC 60068-2-1 Cold Heat Dry Heat IEC 60068-2-2 Vibration IEC 60068-2-6 Repetitive Shock IEC 60068-2-27 Non-Repetitive Shock IEC 60068-2-27 **ORDERING INFORMATION** Cat. No. Description V7DFTS3 110 - 240 VAC, Multi Function Digital Timer - Eliro (33 Functions), 2 C/O

110 - 240 VAC, Multi Function Digital Timer - Eliro (35 Functions), 2 C/O 110 - 240 VAC, Multi Function Digital Timer - Eliro (33 Functions), 2 C/O, 11 Pin Universal socket

V7DDSS3

Programmable Digital Timer Eliso®

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FUNCTIONAL DIAGRAMS

ON DELAY [00]

On application of supply voltage, the preset time duration (T) starts. On completion of the preset time, the output is switched ON and remains ON till the supply voltage is present.

ON DELAY

CONSTANT SUPPLY TYPE 2 [01] Timing will commence when the supply is present and input signal is not applied. After

the time period has elapsed, output is switched ON. If signal is applied then the timing period stops. Timing will restart only when signal is removed. Therefore there are two methods this timer can be controlled, either by application or removal of signal input and with the interruption of the supply voltage to the timer with signal removal

ON DELAY

CONSTANT SUPPLY TYPE 3 [02] A permanent supply is required. The timing period starts when the signal is applied and will

continue irrespective of any further changes to signal input. After the time period has elapsed output is switched ON. Signal change has no effect during timing period. To reset the timer, signal must be removed and then applied.

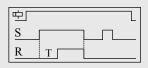
ON DELAY (CONTROL SWITCH RESETTABLE) [03]

When the supply is connected and signal is applied, the timing function starts. If signal is

then timing is restarted and output stays OFF. After preset time has elapsed the output is ON.

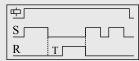
SIGNAL ON DELAY [04]

On application of input signal, the preset time duration (T) starts. On completion of the preset time, the output is switched ON and remains ON till the input signal is present.



INVERTED SIGNAL ON DELAY [05]

On application of supply voltage, the preset time duration (T) starts. When input signal is applied, the timing pauses & resumes only when the signal is removed. On completion of the preset time, the output is switched ON.



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: Supply Voltage, S: Input Signal, R: Relay Output

T: Preset Time, TON: Preset ON Time, TOFF: Preset OFF Time, T-a: Timing Break Before completion

SIGNAL OFF DELAY [07]

On application of supply voltage and input signal, the output is switched ON. When the signal is removed the preset time duration commences & the output is switched OFF at the end of the time duration.

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OFF DELAY CONST. SUPPLY TYPE 2 [08]

A permanent supply is required. When the

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input signal is applied the output is switched ON immediately. When input signal is removed the timing period starts. After the time period has elapsed output is switched

OFF. Once the timing period has started further actions of input signal will have no effect. However once the timing cycle has been completed the process may be started again applying input signal. While the timer is executing the only way to reset the timer is to interrupt the supply.

CYCLIC ON/OFF

{ON start, (Sym, Asym)} [09] On application of supply voltage, the output is



initially switched ON for the preset 'ON' time duration (TON) after which it is switched OFF for the preset 'OFF' time duration (TOFF). This cycle repeats and continues till the supply is present.

CYCLIC OFF/ON {OFF Start, (Sym, Asym)} [10]

On application of supply voltage, the output is initially switched OFF for the preset 'OFF'



time duration (TOFF) after which it is switched ON for the preset 'ON' time duration (TON). This cycle repeats and continues till the supply is present.

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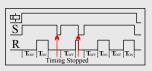
ASYMMETRIC CYCLE PULSE START [11]

A permanent supply is required. The timer function is triggered by the input signal. When input signal applied the output is switched ON while the first preset time period (TON)

elapses. Once this time period (TON) has elapsed output is switched OFF for the second preset time (TOFF) period. Once this second time period (TOFF) had elapsed then output switched ON and the cycle will start from the beginning again. If input signal is removed during timing (TON or TOFF) the cycle will stop and output is switched OFF, cycle will start with output ON state when the input signal applied again

ASYMMETERIC RECYCLER PULSE START TYPE 2 [12]

A permanent supply is required. The timer function is triggered by input signal. When input signal is applied the output is switched OFF while the first preset time period (TOFF)



elapses. Once this time period has elapsed output is switched ON for the second preset time period (TON). Once this second time period (TON) had elapsed then output is switched OFF and the cycle will start from the beginning again. If input signal is removed during timing (TON or TOFF) the cycle will stop and output is switched OFF, cycle will start with output OFF state when the input signal applied again.

SIGNAL ON OFF DELAY [13]

On application of signal the preset time (T) starts. After this preset time has elapsed, output is switched ON. During this timing, if signal is removed then output is switched ON immediately and OFF delay is started. Once



this time period has elapsed the output is switched OFF. During this OFF delay if signal is reapplied the output switched OFF immediately and ON Delay restarted.

interrupted.

INVERTED SIGNAL

ON DELAY-TYPE 2 [06]

Timing starts only upon signal 'S' transition

high to low. During timing or after completion

of Time (i.e. relay on), any signal transition is

ignored. To reset the timer supply has to be

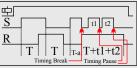
Programmable Digital Timer Eliso[®]



FUNCTIONAL DIAGRAMS

SIGNAL ON OFF DELAY **TYPE 2 [14]**

On application of signal the preset time (T) starts. After this preset time has elapsed, output is switched ON. During this timing, if signal is removed then output is switched ON



immediately and preset timing is restarted. Removing the signal during this timing suspends timing but does not reset the time sequence. Timing will resume immediately when signal is applied. Therefore, total time taken before the delayed contact changes state is the preset time plus any time that the signal is removed. Once this time period has elapsed the output is switched OFF.

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SIGNAL OFF/ON [15]

On application of input signal, the preset delay time period (T) starts. During this timing if signal is removed then timing is stopped and timing will be restarted when signal applied again. After this time period has elapsed output is switched ON. On removal of input signal,

the preset time period starts again & the output is switched OFF when the preset time duration is complete. Output stays OFF until supply voltage has been interrupted.

IMPULSE ON ENERGIZING [16]

On application of supply voltage, the output is instantly switched ON for the preset time duration (T) after which it is switched OFF.

IMPULSE ON/OFF [17]

On application or removal of input signal, the output is switched ON & the preset time duration (T) starts. On completion of the time duration the output is switched OFF. When timing commences, changing the state of the input signal resets the time.

ACCUMULATIVE DELAY ON SIGNAL [18]

On application of supply voltage, the preset timing duration commences. When input signal is applied, the timing pauses and resumes only when the input signal is removed. The output is switched ON at the end of the preset time duration (T).

ACCUMULATIVE DELAY **ON INVERTED SIGNAL [19]**

On application of supply voltage and input signal, the preset timing duration commences. When the signal is removed the timing pauses and resumes when the signal is applied. The output is switched ON at the end of the preset time duration (T).

ACCUMULATIVE IMPULSE ON SIGNAL [20]

On application of supply voltage the output is switched ON & the preset timing duration commences. When the signal is applied the timing pauses and resumes when the signal is removed. The output is switched OFF at the end of the preset time duration (T).

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: Supply Voltage, S: Input Signal, R: Relay Output T: Preset Time, TON: Preset ON Time, TOFF: Preset OFF Time

LEADING EDGE IMPULSE1 [21]

On application of input signal the output is immediately switched ON. The output remains ON for the preset time duration (T) after which it is switched OFF. If the input signal is removed during the preset time, the output remains unaffected

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LEADING EDGE IMPULSE2 [22]

On application of input signal the output is immediately switched ON. The output remains ON for the preset time duration (T) after which it is switched OFF. If the input signal is removed during the preset time, the output is immediately switched OFF.

TRAILING EDGE IMPULSE1 [23]

When the input signal to the timer is removed, the output is immediately switched ON for the preset time duration (T) after which it is switched OFF. If the input signal is applied during the preset time, the output is immediately switched OFF

TRAILING EDGE IMPULSE2 [24]

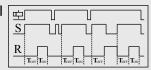
When the input signal to the timer is removed, the output is immediately switched ON for the preset time duration (T) after which it is switched OFF. If the input signal is applied during the preset time, the output remains unaffected

DELAYED IMPULSE [25]

On application of input signal, the preset 'OFF' time duration (TOFF) starts. the output is switched ON at the end of the preset 'OFF' time duration & the preset 'ON' time duration commences irrespective of signal level and remains ON till the completion of 'ToN'.

DELAYED IMPULSE TYPE 2[26]

A permanent supply is required. When signal is applied the output will remain OFF while the first preset time period (TOFF) elapses. Once this time period has elapsed the output is switched ON for the second preset time period (TON). Once this second time period (TON) had elapsed then output is switched OFF and

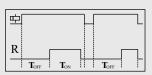


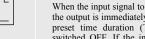
TOFF TON

cycle stops. Output stays OFF until supply voltage has been interrupted. During timing period (TON or TOFF) if signal is removed then output is switched OFF and the cycle stops, cycle will start with output OFF state when the input signal applied again.

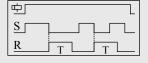
DELAYED PULSE (CONSTANT SUPPLY) POWER BASED [27]

The timing period (TOFF) starts when the supply is applied to the timer. After the preset has elapsed output is switched ON for the preset pulse (TON) duration. To reset the timer the supply has to be interrupted. If this interruption occurs during the pulsed output (TON) then the output is switched OFF and the timer will reset.









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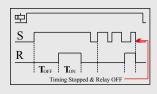
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FUNCTIONAL DIAGRAMS

DELAYED PULSE (REMOTE TRIG.) [28]

The timing period (TOFF) will start when input signal is applied with the supply connected. After preset time (TOFF) has elapsed the output is switched ON for the perselected pulse (TON) duration. To reset the timer either input signal needs to be removed



or supply has to interrupt. If this action occurs during the pulsed output cycle (TON) then output is switched OFF and the timer will reset.

DELAYED PULSE (CONST. SUPPLY TYPE 1) [29]

Supply to the unit must be continuous. On application of input signal the time period 'TOFF' starts to run. On completion of 'TOFF', the relay output is switched ON immediately

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and the time period 'TON' starts to run. On completion of 'TON' the output is switched OFF. The input signal has no effect until'TOFF'+'TON' have completely expired.

1 Supply Voltage, S: Input Signal, R: Relay Output T: Preset Time, TON: Preset ON Time, TOFF: Preset OFF Time

ON PULSE (CONTROL SWITCH RESETTABLE) / WATCH DOG TYPE [30]

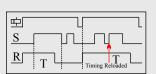
When the supply is connected and signal is applied, output is switched ON and the timing function starts. If signal is removed and applied during the preset timing then timing is restarted and output stays ON. After preset time(TON) has elapsed the output is switched OFF



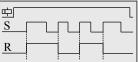
On application of supply voltage the output is switched ON. The first pulse of input signal starts the preset time period. Receiving pulses during the time period extends it and output stays ON. Receiving no signal pulses during the time period completes it and output is switched OFF. Output stays OFF until supply voltage has been interrupted.

LEADING EDGE BI-STABLE OR STEP RELAY [32]

After every signal, the output contact changes their states, alternately switching from open to close and vice versa.



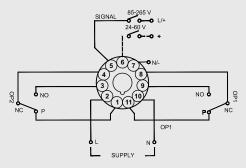
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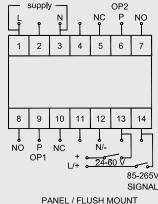


TERMINAL TORQUE & CAPACITY

Ø 3.5 mm	Torque - 0.50 N.m (3.5 Lb.in) Terminal screw - M3
	Solid Wire - 1 X 0.122 mm ²
AWG	1X26 to 14

CONNECTION DIAGRAM





58.2

42.0

DIN / SOCKET / BASE MOUNT

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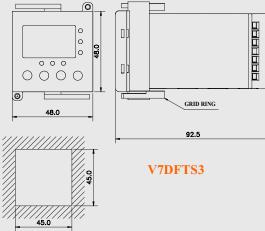
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MOUNTING DIMENSIONS (mm)





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1 mpp mpp mpp

106.5

GRID RING

92.5